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QUARLES & BRADY LLP				
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TUCSON, AZ 85701-1621				
EXAMINER				
BELL, WILLIAM P				
ART UNIT		PAPER NUMBER		
1745				
NOTIFICATION DATE		DELIVERY MODE		
12/14/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pat-dept@quarles.com

Office Action Summary

Application No.

10/597,736

Applicant(s)

SAADATMANESH, HAMID

Examiner

WILLIAM P. BELL

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 November 2010 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10-12, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minayoshi (U.S. Patent No. 6,890,461, already of record) in view of Thom (German Patent No. DE-19625259, already of record) for the reasons cited in the previous Office action. A machine translation of Thom was provided for convenience in the previous Office action; all text citations to Thom refer to paragraph numbers in the machine translation rather than the original German text. Regarding claim 10, Minayoshi teaches a method for repairing, in situ, a hollow support structure (see

column 1, lines 12-14 and 54-58) that has a deteriorated portion (see column 1, lines 15-24, wherein the area at and below the ground surface is the deteriorated portion) and an access opening (see column 1, lines 56-58), comprising the steps of placing a high tensile strength material in the hollow support structure to at least a depth such that the high tensile strength material extends over the depth of the deteriorated portion (see column 10, lines 51-54, wherein the aramid rods are high tensile strength material; see Figure 8, wherein rods 307a extend through both the above ground and below ground section of the hollow pole); pouring an aggregate material into the hollow support structure to incorporate the high strength material in to the aggregate that fills the hollow support structure at least over the depth of the deteriorated portion (see column 12, lines 29-38); and allowing the aggregate to cure in situ (see column 14, line 51).

Minayoshi teaches pouring the aggregate in an amount and to a depth such that the epoxy resin aggregate fills the hollow support structure at least over the depth of the deteriorated portion (see Figure 8). Minayoshi does not teach providing a high tensile strength sleeve in the hollow support structure. Minayoshi does teach providing a high tensile strength material in the form of a sleeve around the exterior of the hollow pole in those situations where the in ground portion of the hollow pole can be excavated (see column 15, lines 11-18). Thom teaches a method of reinforcing a hollow pole (see page 1, paragraph 8) comprising the steps of placing a fabric sleeve having a mouth (see tubular sleeve 2 in Figure 1) through an access opening in the hollow pole (see page 2, paragraph 23) and forcing it into the interior of the pole so that it extends into the in ground portion to a depth that extends of the deteriorated portion of the pole (see page

3, paragraph 1), expanding the sleeve until it contacts the inner surface of the pole (see page 3, paragraphs 4-5), and solidifying the sleeve (see page 3, paragraph 10). Thom teaches that the sleeve comprises a high tensile strength material (see page 2, paragraph 12 and page 3, paragraph 12) which is impregnated with epoxy resin (see page 2, paragraph 14 and page 3, paragraph 16). It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the methods taught by Minayoshi and Thom for the benefit of further reinforcing the hollow pole, especially in those situations in which the in ground portion of the pole cannot be excavated. While Thom does not teach locating the mouth (i.e., the top) of the sleeve in the access opening, it would have been obvious to one of ordinary skill in the art at the time of the invention to have done so for the convenience of being able to control the flow of the aggregate into the center of the sleeve.

Regarding claim 11, Minayoshi teaches a method wherein the hollow support structure has an in ground portion and an above ground portion (see Figure 8), and wherein the hollow support structure has a deteriorated portion extending at least partially into the in ground portion (see column 1, lines 15-24), and an access opening in the above ground portion (see openings 305a and 305b in Figure 8).

Regarding claim 12, Minayoshi teaches a method wherein the step of pouring the aggregate into the hollow support comprises pouring an epoxy resin aggregate (see column 12, lines 33-35) in an amount and to a depth such that the epoxy resin aggregate fills the hollow support structure at least over the depth of the deteriorated portion and the epoxy resin aggregate extends to the access opening (see Figure 8).

Minayoshi does not teach the step of providing a high tensile strength sleeve in the hollow support structure. Minayoshi does teach providing a high tensile strength material in the form of a sleeve around the exterior of the hollow pole in those situations where the in ground portion of the hollow pole can be excavated (see column 15, lines 11-18). Thom teaches a method of reinforcing a hollow pole (see page 1, paragraph 8) comprising the steps of placing a fabric sleeve having a mouth (see tubular sleeve 2 in Figure 1) through an access opening in the hollow pole (see page 2, paragraph 23) and forcing it into the interior of the pole so that it extends into the in ground portion to a depth that extends of the deteriorated portion of the pole (see page 3, paragraph 1), expanding the sleeve until it contacts the inner surface of the pole (see page 3, paragraphs 4-5), and solidifying the sleeve (see page 3, paragraph 10). Thom teaches that the sleeve comprises a high tensile strength material (see page 2, paragraph 12 and page 3, paragraph 12) which is impregnated with epoxy resin (see page 2, paragraph 14 and page 3, paragraph 16). It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the methods taught by Minayoshi and Thom for the benefit of further reinforcing the hollow pole, especially in those situations in which the in ground portion of the pole cannot be excavated. While Thom does not teach locating the mouth (i.e., the top) of the sleeve in the access opening, it would have been obvious to one of ordinary skill in the art at the time of the invention to have done so for the convenience of being able to control the flow of the aggregate into the center of the sleeve.

Regarding claims 16 and 17, Minayoshi teaches that in situations where the hollow pole is located such that the in ground portion can be excavated, an aramid fiber seat may be wrapped around the exterior of the pole to provide further reinforcement (see column 15, lines 11-18). Minayoshi teaches that this step may be performed after the interior of the pole is reinforced (see column 15, line 11). One of skill in the art recognizes that hollow poles such as those taught by Minayoshi may at times deteriorate to the point that holes are formed in the annular wall of the pole, allowing water to penetrate the interior of the pole. In such situations, it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the aramid fiber seat to the exterior of the pole before reinforcing the interior of the damaged area could be cleaned of any debris which may have penetrated the pole and so that the aggregate would not leak out of the hole.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minayoshi (US 6,890,461) and Thom (DE-19625259) as applied to claim 12 above, and further in view of Wood (U.S. Patent No. 6,146,491). Minayoshi does not teach providing a fabric sleeve. Thom teaches a method wherein the fabric sleeve is expanded by use of the "memory effect" of the sleeve material (see page 2, paragraphs 3-5), but can also be expanded by other methods such as inflation or mechanical spreading (see page 1, paragraph 14). Closing the bottom end of the sleeve and pushing the sleeve into the hollow support with a rod represents a much simpler method of inserting the sleeve into the pole than is taught by Thom. Wood teaches that it is known in the art to insert a sleeve into a hollow structure by closing the end of the

sleeve and pushing the sleeve into the hollow structure with a rod (see Figures 3 and 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the method taught by Minayoshi and Thom by closing the bottom of the sleeve and pushing it into place with a rod, as taught by Wood, for the benefit of eliminating the need for and cost associated with the "memory effect" material.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minayoshi (US 6,890,461) and Thom (DE-19625259) as applied to claim 12 above, and further in view of Hillyer (U.S. Patent No. 3,477,979, already of record) for the reasons cited in the previous Office action. Minayoshi teaches a method wherein the aggregate is mixed from sand, gravel, and epoxy (see column 12, lines 33-38), but does not explicitly state that an epoxy hardener is used. However, it is well known in the art that epoxy resins require a hardener compound to initiate the crosslinking reaction which solidifies them. For example, Hillyer teaches an epoxy containing concrete which comprises 20-80% epoxy and 1-50% curing agent or hardener (see column 7, lines 20-25). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the method taught by Minayoshi with the hardener taught by Hillyer, since hardeners are required for proper utilization of epoxy resins. It further would have been obvious to one of ordinary skill in the art at the time of the invention to have optimized the composition of the epoxy aggregate taught by Minayoshi, including the relative amounts of epoxy, hardener, sand, and gravel, for the benefit of providing a suitable combination of stiffness of the solidified aggregate and adhesion of the aggregate to the hollow structure.

Response to Arguments

6. Applicant's arguments filed 12 November 2010 have been fully considered but they are not persuasive. Applicant argues that the combination of Minayoshi and Thom does not teach or suggest a repair method in the way applicant claims. Examiner respectfully disagrees. First, applicant argues that Minayoshi does not teach a method of repairing a hollow support structure. Examiner maintains that one of skill in the art would appreciate that the method taught by Minayoshi is directed to the repair of structures. It is noted that the patent of Minayoshi was classified at the time of its issuance in several classes dealing with the repair of structures, including classes 156/94 (Reclaiming, renewing or repairing articles for reuse) and 264/36.15, 36.16, and 36.2 (Repairing or restoring consumer used articles for reuse). These classifications indicate that the patent was considered at the time of issuance to relate to the repair of structures. While it may be true, as applicant argues, that Minayoshi does not use the word "repair" in the specification or illustrate any damage or deterioration of the structure, the prior art must be taken for all that it discloses, not just the specific words or drawings that are presented. As discussed above, examiner maintains that one of skill in the art would appreciate that reinforcing a structure due to "aging change" would constitute a method of repairing the structure. In response to applicant argument that the disclosure of Minayoshi is directed to reinforcing certain areas of the structure without regard to the location of a deteriorated portion of the structure, examiner respectfully notes that Minayoshi specifically teaches different embodiments wherein the structure is reinforced in different regions which correspond to the areas of "aging

change". In the "First embodiment", Minayoshi teaches that the region of reinforcement is at or about ground level (see column 5, lines 31-36), which was disclosed in the background as the most common area for "aging change" of the structure (see column 1, lines 20-24). In the "Second embodiment", Minayoshi teaches that "aging change" has occurred in the middle region of the structure (see column 8, lines 17-21) and that the reinforcing member and aggregate are placed in the structure in the middle region (see column 9, lines 11-26 and column 10, lines 5-11). In the "Second embodiment", Minayoshi also suggests that the method may be adapted to reinforce the upper portion of the structure due to aging changes that have occurred in that region (see column 8, lines 18-22). Thus Minayoshi teaches positioning the reinforcing member and aggregate in direct correlation with the location of the "aging change".

In response to applicant's argument that Thom teaches away from the proposed combination because Thom notes that it is undesirable to use reinforced concrete for repair in a mast pipe, examiner respectfully notes that the issue of restricted access to wiring within the mast pipe is not an issue in all such structures, as many hollow poles do not have internal wiring, and that the issue with different flexural rigidities referred to by Thom are the result of using concrete with a metallic mast pipe. The proposed combination calls for the use of concrete in a concrete pole and thus would not be subject to the issue of different flexural rigidities. Furthermore, Thom's preference for not using concrete does not change the fact that concrete was used in the prior art or the obviousness of the proposed combination. While concrete may impair durability of the reinforcement, one of skill in the art recognizes that all effects of the reinforcement,

including cost, ease of use, and so forth, must be weighed in deciding on a particular reinforcement. Thus, while a particular reinforcement may be less attractive than another in some aspect, the obviousness of the use of that reinforcement is not changed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM P. BELL whose telephone number is (571)270-7067. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:30 pm; Alternating Fridays, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker can be reached on 571-272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM P BELL/
Examiner, Art Unit 1745

/Philip C Tucker/
Supervisory Patent Examiner, Art Unit 1745